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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,249	08/21/2001	Richard T. Lee	P0738/7001 (ERP/KA)	6506

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EXAMINER
LUCAS, ZACHARIAH

ART UNIT	PAPER NUMBER
1648	6

DATE MAILED: 09/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/934,249	LEE ET AL.	
	Examiner	Art Unit	
	Zachariah Lucas	1648	

-- The MAILING DATE of this communication appears on th cov r sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2001* .

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-78* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-78* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892).
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-11, and claim 68 (in part), drawn to nucleic acids encoding for, of complementary to, or able to hybridize under stringent conditions to nucleic acids encoding for MIVR-1, classified in class 536, subclass 23.1.

II. Claims 12-16, and 68 (in part), drawn to MIVR-1 proteins and polypeptides, classified in class 530, subclass 350.

III. Claims 17-19, and claims 44-47 (as they read on kits comprising an agent that binds to a MIVR-1 expression product), drawn to isolated polypeptides capable of binding to a MIVR-1 peptide, classified in class 530, subclass 386.

IV. Claims 20-30, drawn to methods of determining the levels of MIVR-1 expression, classified in class 436, subclass 501.

V. Claim 31, drawn to methods of identifying modulating agents, classified in class 436, subclass 501

VI. Claims 32-38, drawn to methods of diagnosing conditions characterized by aberrant expression of at least one of a group of genes, classified in class 436, subclass 501.

VII. Claims 39-43, drawn to methods of monitoring vascular conditions comprising monitoring the expression of one of a group of genes, classified in class 436, subclass 501.

VIII. Claims 44-47, drawn to a kit comprising an agent that binds to a MIVR-1 nucleic acid, classified in class 536, subclass 23.33.

IX. Claims 48-49, drawn to methods of treating a cardiovascular condition, classified in class 514, subclass 2.

X. Claims 50-54, drawn to methods of treating apoptotic cell-death of cardiac cells using an agent that modulates expression of a gene so as to inhibit apoptotic cell death, classified in class 514, subclass 2.

XI. Claim 55, drawn to a method for treating cardiac hypertrophy by administering an agent that increases cardiac cell-death, classified in class 514, subclass 2.

XII. Claim 56, drawn to methods for treating subjects at risk for developing a cardiovascular condition using any one of a group of agents, classified in class 514, subclass 2.

XIII. Claims 57-62, drawn to methods of identifying candidate agents for the treatment of cardiovascular conditions, classified in class 436, subclass 501.

XIV. Claims 63-67, drawn to methods of identifying candidate agents useful for the treatment of cardiac hypertrophy, classified in class 436, subclass 501.

XV. Claims 68 and 70, drawn to pharmaceutical compositions comprising nucleic acids encoding for one of a group of proteins, classified in class 514, subclass 44.

XVI. Claims 68-70, drawn to pharmaceutical compositions comprising products from the expression of one of a group of proteins, classified in class 514, subclass 2.

XVII. Claim 71, drawn to pharmaceutical compositions comprising agents inhibiting one of a group of nucleic acids, classified in class 514, subclass 2.

XVIII. Claim 71, drawn to pharmaceutical compositions comprising agents inhibiting one of a group of proteins, classified in class 514, subclass 2.

XIX. Claims 72-78, drawn to solid phase nucleic acid molecule arrays, classified in class 536, subclass 24.3.

For each of Groups V-VII, and X-XIX above, restriction to one of the following is also required under 35 USC 121. Therefore, election is required of one of Groups I-XX, and, if one of the identified Groups is elected, to one of subgroups (A)-(E). Subgroups (A)-(E) each comprise the invention of the elected Group wherein the protein, gene, or nucleic acid is the molecule that relates to:

(A) MIVR-1;
(B) IEX-1;
(C) VDUP-1:
(D) BTG-2; or
(E) TIS-11d.

For Group IV above, restriction to one of the following is also required under 35 USC 121. Therefore, election is required of one of inventions I-XIX, and, if Group IV is elected, to one of inventions IV-1 to IV-4.

(IV-1) The invention of Group IV wherein the method comprises measuring mRNA levels using PCR.
(IV-2) The invention of Group IV wherein the method comprises measuring mRNA levels using Northern blotting.
(IV-3) The invention of Group IV wherein the method comprises measuring MIVR-1 protein levels using antibodies.
(IV-4) The invention of Group IV wherein the method comprises measuring MIVR-1 protein levels by measuring protein activity.

For each of Groups I, II, X, XV, XV and XVI above, restriction to one of the following is also required under 35 USC 121. Therefore, election is required of one of Groups I-XIX, and, if one of the identified Groups is elected, to one of subgroups (F)-(I).

(F) The invention of the elected Group wherein the disease is a myocardial infarction;
(G) The invention of the elected Group wherein the disease is a stroke;
(H) The invention of the elected Group wherein the disease is arteriosclerosis; or
(I) The invention of the elected Group wherein the disease is a heart failure.

For Group VI above, restriction to one of the following is also required under 35 USC 121. Therefore, election is required of one of Groups I-XIX, and, if Group VI is elected, to one of subgroups (F)-(I) above or to subgroup (J) below.

(J) The invention of the elected Group wherein the disease is cardiac hypertrophy.

For Group VII above, restriction to one of the following is also required under 35 USC 121. Therefore, election is required of one of Groups I-XIX, and, if Group VII is elected, to one of subgroups (VII-1)-(VIII-3) below. The subgroups (VII-1)-(VIII-3) comprise the invention of Group VII wherein:

(VII-1) the parameter monitored for is a nucleic acid;
(VII-2) the parameter monitored for is a peptide or polypeptide; or
(VII-3) the parameter monitored for is an antibody.

For Group XII above, restriction to one of the following is also required under 35 USC 121. Therefore, election is required of one of Groups I-XX, and, if Group XIII is elected, to one of subgroups (XII-1)- (XII-17) below. The inventions of subgroups (XIII-1) – (XIII-17) relate to the inventions of Group X, wherein the agent administered is:

(XII-1) an anti-inflammatory agent;
(XII-2) an anti-thrombotic agent;
(XII-3) an anti-platelet agent;
(XII-4) a fibrinolytic agent;
(XII-5) a lipid reducing agent;
(XII-6) a direct thrombin inhibitor;
(XII-7) a glycoprotein IIb/IIIa receptor inhibitor;
(XII-8) an agent that binds to cellular adhesion molecules and inhibits the ability of white blood cells to attach to such molecules;
(XII-9) a calcium channel blocker;
(XII-10) a beta-adrenergic receptor blocker;
(XII-11) a cyclooxygenase-2 inhibitor;
(XII-12) an angiotensin system inhibitor;
(XII-13) an agent that modulates the expression of MIVR-1;
(XII-14) an agent that modulates the expression of IEX-1;
(XII-15) an agent that modulates the expression of VDUP-1;
(XII-16) an agent that modulates the expression of BTG-2; or
(XII-17) an agent that modulates the expression of TIS-11d.

The inventions are distinct, each from the others, for the following reasons:

2. The inventions of subgroups (A)-(E) are either unrelated or related as subcombinations disclosed as usable together in a single combination, depending on which Group was elected. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the case of Groups V, VII, X-XII, and XV-XVII, the different

subgroups are unrelated. As the inventions of each of these Groups involves a different compound, they each have either a different function (e.g. modulating agents modulate a different molecule), or have a different mode of operation (e.g. use a different compound as an indicator of a vascular condition), and as the different inventions are not disclosed as usable together, the subgroups are distinct.

In the case of Groups VI, XIII, XIV, and XVIII, the different subgroups are related as subcombinations usable together. The subcombinations are distinct from each other if they are shown to be separately usable. See MPEP § 806.05(d). The inventions of each of these subgroups have the same utility alone as the combination and the other subcombinations. As each of the subcombinations has a separate use, the groups of inventions comprising them are distinct.

3. The methods of subgroups IV-1 to IV-4 and of subgroups VII-1 to VII-3 are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the different inventions each relate to methods of using either different procedures to measure the levels of MIVR-1 expression, monitoring different molecules in methods of disease monitoring, or using different compounds to treat diseases. As each of the methods uses or monitors a different compound or procedure, they have different modes of operation. As the different modes of operation are not disclosed as usable one with another, the methods are distinct.

4. The inventions of subgroups (F)-(J) are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of

operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the different inventions relate to methods of treating diagnosing, or compounds useful in treating, different diseases. As each of the inventions relates to a different disease, the respective inventions are performing different functions. As the different inventions are not disclosed as usable together, the inventions are distinct.

5. The inventions of Groups I-III, VIII, XV-XVII, and XVIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the compounds in the different groups are different types of molecules or combinations of products that perform different functions from each other. As each of the products has a different structure, different function, or both form the other molecules, and as the different molecules are not disclosed as usable together, the inventions comprising these different molecules are distinct.

6. The inventions of Groups IV-VII, and IX-XIV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the different inventions relate to methods that perform different functions (e.g. identifying molecules, diagnosing diseases, treating various diseases. As each of the either performs a different function and are not disclosed as useable together, the methods are distinct one from another.

7. The inventions of Groups I-II, XV-XVIII, and XIX are unrelated to the inventions of Groups IV-XIV. Inventions are unrelated if it can be shown that they are not disclosed as capable

of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the first set of inventions relate to products that are not used in, or made by the methods of the second set. The products of the first set of Groups may be used in multiple for multiple purposes, but are not used in the methods in the second set. The methods of the second set of groups involve the identification of various modulating agents of the products of the first set of groups, and to methods of using those agents to perform various functions. As the methods and the products are not disclosed as useable together, and as the methods do not use or make the products, the two sets of inventions are distinct.

Species Election

8. This application contains claims directed to the following patentably distinct species of the claimed invention:

For Group IX, the invention comprises the species of the invention wherein the method comprises administering a modulating agent in combination with one of the agents identified in claim 49 as filed. The applicant is required to elect one of the agents listed in claim 49.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 48 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable

thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Conclusion

9. Because these inventions are distinct for the reasons given above, have acquired a separate status in art because of recognized divergent subject matter and different classifications, and because the literature and sequence searches required for any one of the groups is not required for the others, restriction for examination purposes as indicated is proper.

10. Applicant's attention is hereby directed to the following is a recitation of M.P.E.P. §821.04 regarding the restriction of claims to a product and processes of using the product, Rejoinder:

> Where product and process claims drawn to independent and distinct inventions are presented in the same application, applicant may be called upon under 35 U.S.C. 121 to elect claims to either the product or process. See MPEP § 806.05(f) and § 806.05(h). The claims to the nonelected invention will be withdrawn from further consideration under 37 CFR 1.142. See MPEP § 809.02© and § 821 through § 821.03. However, if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn

process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined.

Where product and process claims are presented in a single application and that application qualifies under the transitional restriction practice pursuant to 37 CFR 1.129(b), applicant may either (1) elect the invention to be searched and examined and pay the fee set forth in 37 CFR 1.17(s) and have the additional inventions searched and examined under 37 CFR 1.129(b)(2), or (2) elect the invention to be searched and examined and not pay the additional fee (37 CFR 1.129(b)(3)). Where no additional fee is paid, if the elected invention is directed to the product and the claims directed to the product are subsequently found patentable, process claims which either depend from or include all the limitations of the allowable product will be rejoined. If applicant chooses to pay the fees to have the additional inventions searched and examined pursuant to 37 CFR 1.129(b)(2), even if the product is found allowable, applicant would not be entitled to a refund of the fees paid under 37 CFR 1.129(b) by arguing that the process claims could have been rejoined. 37 CFR 1.26 states that "[m]oney paid by actual mistake or in excess will be refunded, but a mere change of purpose after the payment of money...will not entitle a party to demand such a return..." The fees paid under 37 CFR 1.129(b) were not paid by actual mistake nor paid in excess, therefore, applicant would not be entitled to a refund.

In the event of rejoinder, the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104 - 1.106. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. If the application containing the rejoined claims is not in condition for allowance, the subsequent Office action may be made final, or, if the application was already under final rejection, the next Office action may be an advisory action.

The following is a recitation from paragraph five, "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai, In re Brouwer* and 35 U.S.C. §103(b)" (1184 TMOG 86(March 26, 1996)):

"However, in the case of an elected product claim, rejoinder will be permitted when a product claim is found allowable and the withdrawn process claim **depends from or otherwise includes all the limitations of** an allowed product claim. Withdrawn process claims not commensurate in scope with an allowed product claim will not be rejoined." (emphasis added)

In accordance with M.P.E.P. §821.04 and In re Ochiai, 71 F.3d 1565, 37 USPQ 1127 (Fed. Cir. 1995), rejoinder of product claims with process claims commensurate in scope with the allowed product claims will occur following a finding that the product claims are allowable. Until, such time, a restriction between product claims and process claims is deemed proper. Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution to maintain either dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

11. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachariah Lucas whose telephone number is 703-308-4240. The examiner can normally be reached on Monday-Friday, 8 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on 703-308-4027. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Z. Lucas
Patent Examiner
August 28, 2002

JAMES HOUSEL 9/9/02
SUPERVISORY PATENT EXAMINER
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